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XXI.—*On the Birds of Ngamiland.* By W. R. OGILVIE-GRANT, M.B.O.U. *With Itinerary and Field-Notes by* R. B. WOOSNAM, M.B.O.U.

(Text-figure 10.)

It had long been the ambition of Mr. R. B. Woosnam to make an expedition into the heart of the Kalahari Desert, and as I was equally anxious to procure zoological collections from Ngamiland for the Natural History Museum, I was glad to assist him in carrying out this project. Thanks to the generosity of the Duke of Bedford, Lord Iveagh, Sir Andrew Noble, Mr. Rowland Ward, and the late Mr. C. Czarnikow, considerable funds were obtained for the purpose; also, through the intervention of Dr. P. L. Selater, a sum of £100 was specially granted by the Royal Society to assist in making a collection of the Fishes of Lake Ngami. It was most important that the collection of Fishes should be as complete as possible, for there is a very special interest attaching to them, and, as the lake is rapidly becoming dry, the extermination of many of the peculiar species is probably only a matter of time.

Mr. Woosnam was fortunate enough to obtain the help and companionship of the Hon. Gerald Legge, who was also one of the members of the recent expedition to Ruwenzori, and he very kindly not only contributed towards the expenses of the trip, but rendered much valuable service in collecting specimens.

Though the series of Birds is not very large or complete, the specimens procured form a valuable addition to the National Collection, nothing having been received from Ngamiland since James Chapman and C. J. Andersson visited that country nearly fifty years ago.

Lake Ngami (text-fig. 10, p. 356) is situated in the north of the Kalahari Desert, and lies between 20° and 21° South latitude, and in 23° East longitude. There are two routes to the Lake through British territory, which have been used by traders for the last fifty years. One from Palapye Road Station, *via* Serowe (Khama's capital), and thence N. and N.E. across the desert to the nearest point of the Botletle River, whence the road follows the river up to the Lake. This was Livingstone's way and is the best-known—in fact, it is now the only route used. The other, which starts from Mafeking, goes west, *via* Kakia and Kokong to Lehutitu, and thence north past Okwa and Ghanzi to the Lake. This route is never used now, and when we travelled by it in 1909 only one wagon had been along the track during the previous six years, so that it was almost entirely obliterated between Lehutitu and Ghanzi. For various reasons we decided to start from Vryburg, and, crossing the Molopo River to join the Mafeking-Lehutitu road at Kakia. This is really the shortest road from Vryburg to Lake Ngami and passes through the middle of the desert; but, in time, the first-mentioned route is a little shorter, since the journey as far as Palapye Road can be made by rail.

The expedition was fitted out at Vryburg, the transport consisting of one full-tented ox-wagon, twenty oxen, and two riding-horses, as well as three natives (a driver, a leader, and a cook). It is absolutely essential that the driver should be a first-class man, thoroughly experienced in handling oxen in a thirst-country, and he must know what oxen can do, otherwise such a journey is almost certain to end in serious disaster, with loss of all transport and probably the lives of all concerned.

The South-African ox-wagon is not really a very suitable conveyance for travelling in the Kalahari. It is very heavy

and cumbersome, the two front wheels being rather small, while the narrow tyres of all four sink so deeply into the soft sand that it is often as much as twenty oxen can do to pull it at all. Far better than the ox-wagon is a good strong Scotch-cart, with only two wheels, and those large ones : twelve or fourteen oxen can pull it with ease through any sand, and it is much easier to drive in timbered country as it can be turned about so much more handily. An ox-wagon, however, will hold at least four times as much as a Scotch-cart, is far more comfortable and roomy to travel in, and if not loaded with more than 4000 lbs., can usually be taken anywhere by a good team of oxen. The tent of the wagon or Scotch-cart should be sound and covered with strong canvas and the front part with raw ox-skins, put on soft, with the hairy side next the wagon, otherwise the continual brushing past the thorn-trees will strip off the covering in a very short time. For the same reason, it is quite useless to tie anything on the outside of the wagon. Water-barrels should be slung underneath, and must be very firmly attached. Strong raw-hide reins are best for this purpose, for when a stump or fallen tree strikes the barrel a rein will give a little, while an iron fixture will either break or burst the barrel. The barrels should be hung as high as possible from the ground to prevent them touching it when the wheels are in deep sand. It is also important to have them fitted with sound taps, which can be locked. The barrels should be inspected *daily* to see that they are not leaking.

It is not advisable to take a new wagon for a long journey in the desert : a sound secondhand wagon is the most reliable, as its weak points have already been discovered, and it will better withstand the extremely dry and hot climate.

The selection of oxen is a most important point for any expedition into the Kalahari, for upon their efficiency its success to a very great extent depends. The "Short-horn" and "Friesland" breeds are not at all suitable, as they cannot stand thirst and are not accustomed to feeding on the wild melons. "Africander" trek-oxen are fairly good, especially if they have been bred in Bechuanaland or in the

Protectorate, along the borders of the desert ; but I think by far the best is the "Kaffir ox," which appears to be a kind of degenerate cross-breed between the "Damara" and "Africander" and has always very large horns. These oxen, if chosen from such districts as Morokwén or anywhere along the edges of the desert, are well accustomed to thirst, as in such places during the dry season water is seldom obtainable except from wells. The natives never think of watering their oxen oftener than once in two days, and in many places they have to live entirely on wild melons for six months in the year. Such oxen are obviously eminently suited for use in the desert. My experience is that the best type is one that is compactly and strongly built, with a short neck ; it does not take so long to feed as a big ox, and will stand the heavy work in the sand better than a large lanky beast*.

It would take far too long to give here a detailed account of the journey, day by day, through the desert, from Vryburg to Lake Ngami, and this would consist for the most part of a monotonous catalogue of long, cold night-treks through the interminable silent bush-veldt of the Kalahari ; I will therefore attempt to give only a short outline of the various stages into which the journey can be divided. As the heat of the sun is too great to allow oxen, which are getting no water, to work during the day-time, all travelling has to be done at night, after 4 P.M. and up to 10 A.M. This leaves a very short day, which is almost entirely taken up by much-needed sleep and rest, so that while travelling in the Kalahari very little time is available for work of any kind.

The first stage of the journey is from Vryburg to Morokwen, a distance of about ninety-five miles. The road

* It is most important that the span of oxen should be thoroughly well trained to pull together evenly, for during the long dark night-treks it is almost impossible for the driver to note all the shirkers, which will not do their fair share of the work, while the best oxen are killing themselves. The two front and hind oxen are the most important in the whole span.

passes through civilized country all the way, and water is obtainable at farms every day. Morokwen is a large native stadt, which is placed around the edge of one of the huge flat salt-pans so characteristic of the Kalahari Desert proper, which may be said to begin at that place. The next stage, to the Molopo, nearly a hundred miles, is a very unpleasant bit of travelling, the road, with the exception of the last thirty miles, being terribly stony and passing through a great deal of low "hock dorn" scrub, by far the most impenetrable and destructive thorny vegetation met with in South Africa. Water is only to be had at long intervals, and is very bad; in fact, at one halting-place, which had been deserted by the natives, the water we were obliged to use was the worst met with during the whole journey. It had to be boiled with alum and the green slime allowed to deposit several times before it was possible to use it, and even then it had a most disagreeable flavour.

At Morokwen the open veldt is left behind, while the tall "Kameel-thorn" forest and bush-veldt, so typical of the Kalahari, begins, and extends right up to and beyond Ngamiland, with only a few short breaks of more or less open country. As soon as this forest-country is entered many birds are met with which are not to be seen in the barer district to the east. A fine Red-legged Francolin (*Franco-linus adspersus*) is very conspicuous, being a very noisy bird in the mornings and evenings. A Hornbill (*Lophoceros leucomelas*) and the Long-tailed Shrike (*Urolestes melano-leucus*) are also very noticeable.

At night the Pearl-spotted Owl and Erlanger's Scops-Owl may be heard calling in all directions. Both of these small Owls were particularly common along the Molopo River, and are most delightful little birds. In Ngamiland we were fortunate enough to get young ones of both species, which travelled safely home to England and lived for some time in the Zoological Gardens. They were, I think, the most amusing and charming pets I have ever had.

We spent some time on the Molopo River, as the oxen's feet had been much cut and knocked about on the bad

stones between Morokwen and the Molopo, and while there we experienced the most terrific thunderstorm I have ever witnessed. It came on quite suddenly at 10 o'clock at night on April 5th. Its path was only about three-quarters of a mile broad, and swept across from west to east. Our camp was, luckily, only touched by the margin of the storm, or we should certainly have lost some of the oxen and horses. It will give some idea of the severity of the disturbance when I say that the next morning the hail-stones, after lying melting on the ground all the night, which was a warm one, were $1\frac{1}{2}$ inches in length. Along the path of the storm the acacia-trees were completely stripped of their foliage, boughs as thick as one's finger being cut off as if by a bullet. All the grass and vegetation was beaten down and cut up into short lengths of a few inches. I saw several dead and stunned birds about, all, curiously enough, being Glossy Starlings; and the river-banks were strewn with dead and crippled frogs.

From the Molopo River we had a long stretch of desert to cross, fifty miles without water, to a village called Kakia. There is practically no road to follow, only a little-used foot-path, and the bush is very dense all the way. Here, however, the sandy soil being exceptionally hard for the desert, the distance can be traversed in a comparatively short time, and we managed to reach Kakia on the third evening. When travelling in the desert it is necessary to drive the oxen as hard as possible between the various waters, and then give them a few days' rest, at each water-hole to recuperate, as they will not feed when thirsty. Kakia is a miserable spot and particularly lifeless. There is a huge shallow salt-pan, on the north-east side of which is a fairly strong spring of fresh water and a stronger spring of slightly brackish water, near a small Barolong village. The people were all very ill with what was probably a specially malignant form of malaria. There had been many deaths, and we were told that the natives were dying by hundreds further on at Lehutitu, which proved to be true.

The big pan at Kakia is quite dry during nine months of

the year and is very shallow : there were a few small Waders feeding along the edge and a small family-party of Pink-billed Teal, which had evidently bred among some stunted rushes on the south side. We were surprised to see also two pairs of Dabchicks with full-grown young.

From Kakia there is a very long waterless stage of a hundred and sixty miles to a place called Lehutitu, or Lehututu, the native name for the large Ground Hornbill. Why this village should be named after it, I do not know, as I never saw or heard one of these birds in the neighbourhood, and we did not meet with them until we reached the marshes of Ngamiland, where they are not uncommon. The road is a comparatively well-marked one, as several traders' wagons pass along it every year, between Mafeking and Lehutitu, which is a rather important native centre, near the German border. There are a great many large shallow pans between Kakia and Lehutitu which hold water during the height of a good rainy season, and water can then be obtained every day during the journey; but that is a very unpleasant time to travel in the Kalahari, and the pans were all dry when we passed in May. We obtained water for the oxen, however, at one place called Kokong (the native name for a Gnu), about forty miles from Kakia, where there is a small Barolong village, situated in an enormous basin several miles across. At the bottom of the basin there is a pan and some wells, which run dry in a bad season. The sides of this depression, which are covered with short grass, are devoid of the inevitable Kameel-thorn, and here we saw several wild Ostriches and the Black Knorhaan. There are usually a few isolated pairs of the latter in the open grassy pans throughout the Kalahari, but they are never found in the Kameel-thorn forest, where their place is taken by the Red-crested Bustard, which is very numerous in all the bush-country of the Desert. This handsome bird is a most accomplished ventriloquist. It is most difficult to locate its succession of whistling notes, which are such a familiar sound in the Kalahari, unless the bird indulges in its remarkable habit of suddenly shooting, rocket-like, into the

air for about fifty feet and then dropping like a stone, with wings closed, to the ground. The males alone perform this feat and principally during the breeding-season, but I have seen them do so in the early mornings or evenings in mid-winter.

After leaving Kokong we had a distance of a hundred and twenty miles to accomplish without water to Lehutitu, which we succeeded in reaching on the eighth day. There were very few sarma or wild melons along this part of the desert, and the oxen were suffering so much from thirst by the fifth day that we were obliged to outspan them and let the driver take them on to the water at Lehutitu, while we remained with the wagon until they returned two days later. We were able to reach Lehutitu safely, and remained there for nearly a week to rest the oxen. Lehutitu is another huge shallow salt-pan, dry at the time of our visit, flat as a billiard-table, and of a glistening white or grey colour. The central part of the Kalahari is covered with these pans, and they are to be met with in all directions every ten miles or so. Some are covered with grass, others are absolutely bare, and when dry these latter usually shew a considerable deposit of salt and nitrate of soda.

From Lehutitu there is another long waterless stage of a hundred and thirty miles to Okwa. We were fortunate, however, in obtaining a little water for the oxen from a native well at a dry pan called Ohé, about thirty-five miles from Lehutitu, but it is only after a good rainy season that water can be obtained there. At one end of this pan the natives had dug some shallow pits, which still held a little stagnant and filthy water, and the number of Doves which came to drink there every morning quite baffles description. They come in great numbers to all the desert wells, but at Ohé they were in countless thousands, and so ridiculously nervous and easily startled that they spent half the day in attempting to quench their thirst. Battalions wheeled round and round over the pool, and just as they were about to settle some unexpected movement would startle the whole flock, which would continue flying round and round as before. There must be

enormous migrations of these Desert-Doves, else they would die by millions from thirst; for towards the end of the dry season all but the deep wells run dry and they cannot obtain water from them. There are two kinds of birds the sight or sound of which gladden the heart of the traveller in the Kalahari—Doves and Bulbuls. Their presence is an absolutely sure indication that water is at no great distance, for I believe both these birds must have it every day. It is rather remarkable that on this dry pan at Ohé we saw three Avocets and two Stilts, locking, and no doubt feeling, like the proverbial Pelican. Probably they had been passing over at night, and being deceived by the glistening dry pan had come down, thinking it was water.

The remaining hundred miles from Ohé to Okwa was a very pleasant part of the journey, as sarma were abundant the whole way and we were consequently able to travel more slowly. The oxen and horses did not suffer in the least from thirst, and most of them would not drink on arrival at Okwa, after having been eight days without water.

The problems and difficulties of travelling in the Kalahari are almost entirely summed up in the two words "water" and "sarma."

Okwa Spruit is a fine broad valley, at the bottom of which is the rocky bed of a periodical stream that only runs during the rains. There were still some good pools of water standing in the bed, on one of which we found two Pink-billed Teal. There seems little doubt that this fine spruit runs north-east across the desert into the Botletle River near Rakop's.

From Okwa we had little difficulty, so far as water was concerned, in reaching Ngamiland, a distance of about a hundred and sixty miles; but we had great difficulty in finding the way, as we discovered before reaching Okwa that the guide we had taken from Lehutitu knew rather less about the road than we did ourselves, and we were unable to get another. To make matters worse, only one wagon had been along this track during the last six years, so that in places no traces of it were to be seen.

From Okwa we had two long stretches of about forty miles without water. Then came several very pleasant days travelling through the Ghanzi district, where quite a large colony of Boers is springing up. Here we passed rocky pans of water every five or six miles, and first began to realize the proximity of the Okavango marshes.

Large numbers of Ducks were flying to these small pans in the evening, numerous Painted and African Snipes were also flushed, and one Pigmy Goose was obtained. The vegetation had begun to change somewhat at Okwa, and numerous scented shrubs and new varieties of acacias with delicate tropical-looking foliage began to appear. Near Okwa we had noticed a few stunted bushes with large semi-tropical-looking dark green leaves; these bushes increased in size and in frequency as we went north, till in Ngamiland they grew into quite magnificent trees. There was practically no change in the bird-life until the edge of the marshes was reached. There the Red-crested Bustard disappeared and another Francolin (*F. swainsoni*) appeared, which we had not seen before reaching the Ghanzi district. On June 23rd we reached the first branch of the Okavango River, about twenty miles north of Lake Ngami, having been in the desert since March 25th. We were lucky enough to receive a most favourable first impression, for at this spot we saw more Ducks and Geese, both as regards variety and numbers, than at any other place visited during our stay in Ngamiland.

LAKE NGAMI AND THE OKAVANGO MARSHES,

At the present day the importance and capacity of Lake Ngami is infinitesimal when compared with the huge extent of the Okavango marshes and the periodically flooded area to the N. and N.E. of the lake; and it is important to realize that the origin and only source of all the intricate maze of streams and marshes in Ngamiland is the great Okavango River, which rises in the Mosamba Mountains in Portuguese W. Africa and drains an enormous area with a very heavy rainfall from September to February or March. The result

of this is a huge periodical flood which flows down the Okavango into the marshes of Ngamiland, of which Lake Ngami is really a part. These gradually rise and overspread hundreds of square miles of the surrounding country, which is extraordinarily flat, the inundation reaching its highest point *not* during the rainy season, but towards the end of the dry season about August or September. None of this enormous volume of water finds its way to the sea, but after filling the marshes north of the lake, and formerly the lake itself, flows on down the Botletle or Zonga River, and is at length lost by evaporation and percolation.

No doubt formerly, on many occasions, some of this flood-water has reached the great Makarikari salt-pan, which is the Ngamiland basin; but apparently no flood has been sufficiently large to reach it for many years, although an old dry river-bed can be traced a long way to the east of the present end of the Botletle.

It is no doubt only quite recently that the water-supply of Lake Ngami has failed and the lake has partially dried up, for although the processes which have brought about this result must have been in progress long before Livingstone's visit in 1849, his descriptions of the lake and his illustration clearly shew it to have been then an imposing sheet of water and to a great extent open. To-day Lake Ngami is merely a great reed-bed, which dries up almost entirely before the periodical flood begins. Whether there are any large pools and open sheets of water in the interior of this reed-bed, which do not dry up, unfortunately I cannot say, as no white man has ever penetrated far into the lake* and native evidence is not unanimous on the subject. I am, however, certainly inclined to agree with those who say that by March the lake is absolutely dry on the surface, except for a few shallow pools at the S.E. corner where it is connected with the Botletle. The

* It was very unfortunate that this point could not be cleared up, but, owing to the sudden and serious illness of my companion, a hasty retreat had to be made to the railway-line before the exploration of the centre of the lake had been carried out.

explanation of this failure of the water-supply of the lake is to be found in the fact that one of the many large channels of the Okavango River, called the Tèoughé, which formerly ran into the lake at the N.W. corner, has gradually become choked by a natural process of reed-growth and silting-up. Now no water at all finds its way into the lake from the north-west, and its only source of supply is the south-east corner, where it is connected with the Botletle by a kind of back-water or arm through which it receives a certain amount of water when the floods in the Botletle have risen sufficiently high for water to run back along this channel. Livingstone wrote of this back-water that it had never been observed to flow either way and was as stagnant as the lake itself, but this is not the case at the present day. At the time of our departure from Ngamiland in October water was running *into the lake* with considerable current and volume, but the lake never fills now to anything like its former level.

From the ornithological point of view we found Ngamiland rather disappointing. Even the water-birds (Ducks excepted) were not observed in such numbers as we had been led to expect from the descriptions of other travellers, and I can only remember seeing two Pelicans during the whole of our stay. However, there is no doubt that the date of our visit, which was while the inundation was rising (the dry season), was not the best time to see the birds. It is during the rains (October to March), when the floods are subsiding, that such vast quantities of water-fowl are attracted to feed on the flats. The Marabou Storks were beginning to appear in parties when we were obliged to leave in October.

Ducks were always to be seen, often in incredible numbers, fighting in the evenings. By far the most numerous species was the Pink-billed Teal, and next the Cape Pochard. The Yellow-billed Duck was not very common. Hottentot Teal were met with in small numbers throughout the marshes, and the White-faced Tree-Duck was often found in large flocks. It is curious that we did not see a single specimen of the Cape Shoveler in Ngamiland, nor did we notice any Egyptian Geese. The Knob-billed Duck was in fair numbers, and the Pigmy Goose was very plentiful on the Tamalakan

River and in the marshes. The Whistling Tree-Duck had a very curious local distribution; two or three individuals were seen at Maputi, where we first touched the marshes, but they were by no means common there and were never met with again till we reached what is called Lake Kamadan at the end of the Botletle, where this was quite the commonest Duck.

The collection is by no means representative of the birds of Ngamiland, for I was principally engaged in procuring the fishes, and our sudden and hasty departure left the collections in an incomplete condition.—*R. B. U.*

The following paper contains a list of the localities at which birds were collected and an account of the species procured, with field-notes by the collectors.

Examples of four new species (*Cisticola kalaharie*, *Bradypterus bedfordi*, *Certhilunda kalaharie*, and *Trachyphonus nobilis*) were obtained, also one new subspecies of Bulbul, *Pycnonotus tricolor ngamii*. The first-mentioned of these species has been already described in the 'Bulletin' of the B.O.C.; the remaining forms are described in the present paper.

For the sake of brevity, Dr. Reichenow's 'Die Vögel Afrikas' is quoted throughout as 'Reich.'; Shelley's 'Birds of Africa' as 'Shelley'; and Stark and Selater's 'Fauna of South Africa, Birds' is referred to as 'Stark' or 'Stark & Selater' according to the volume quoted, vols. i. and ii. having been written by the late Dr. Stark, while Mr. W. L. Selater was responsible for the authorship of volumes iii. and iv.

Localities where Birds were collected.

Molopo River.	3000 ft.	8th-25th April.
Kakia.	3000 ft.	6th May.
Lehutitu.	3000 ft.	15th-30th May.
Okwa.	3000 ft.	6th June.
Ghanzi.	3000 ft.	13th-16th June.
Tsau.	2700 ft.	22nd-30th June.
Lake Ngami.	2700 ft.	20th June-12th July & 5th September.
Tamalakan River.	2700-3000 ft.	22nd July and 24th August.
Mababe Flats.	2900 ft.	24th July-15th August.
Botletle River.	3000 ft.	1st December.
Vryburg.		18th February-10th April.

LAMPROCOLIUS SYCOBIUS (Licht.).

Lamprocolius sycobius Stark, i. p. 41.

Lamprocolius chalybæus sycobius Reich. ii. p. 688.

a, b. ♂ ♀. Lake Ngami, 2700 ft., 8th July. (Nos. 549, 550, G. L.)

Iris orange; bill and feet black.

I am very doubtful as to the advisability of separating the southern form of this Glossy Starling from *L. chalybæus* (Hempr. & Ehr.) of Abyssinia, &c. The ear-coverts in the southern bird certainly seem to form a more distinct spot.

LAMPROTORNIS AUSTRALIS (Smith).

Lamprocolius australis Stark, i. p. 35.

Lamprotornis australis Reich. ii. p. 707.

a. ♀. Lake Ngami, 2700 ft., 9th July. (No. 58, R. B. W.)

Iris dark brown; bill and feet black.

A somewhat worn example of Burchell's Glossy Starling.

DILOPHUS CARUNCULATUS (Gmel.).

Dilophus carunculatus Stark, i. p. 23.

a, b. ♂ vix ad. et ♀. Lake Ngami, 2700 ft., 5th July. (Nos. 541, 542, G. L.)

Iris dark brown; bare space round the eye yellow; bill brown; feet dark brown.

The Wattled Starling is a common bird in Ngamiland, and is usually to be seen feeding along the edges of the flood-water as it recedes from the inundated native fields and gardens.

BUPHAGA ERYTHORHYNCHA (Stanl.).

Buphaga erythrorhyncha Stark, i. p. 20.

a. ♀. Lake Ngami, 2700 ft., 5th July. (No. 544, G. L.)

Iris orange; eyelid yellow; bill red; feet black.

A dark specimen in freshly-moulted plumage.

The Red-billed Ox-pecker was not a common bird in Ngamiland. The few which were met with seemed to prefer mules and horses to oxen, and have gained a bad reputation on account of their habit of tearing open old sores on horses' backs. They move about on their hosts much after

the manner of a Woodpecker on a tree, and when disturbed fly off to the nearest tree. I have never seen these birds on the ground, and the only note I have ever heard them utter is a low squeak or whistle.

VIDUA REGIA (Linn.).

Vidua regia Stark, i. p. 148.

a. ♂. Molopo River, 3000 ft., 8th April. (*G. L.*)

b. ♀ imm. Okwa, 3000 ft., 6th June. (No. 45, *R. B. W.*)

c. ♂ imm. Ngami, 2700 ft., 7th July. (No. 548, *G. L.*)

♂ ad. Iris hazel; bill and feet scarlet.

♂ imm. Iris hazel; bill and feet brown.

♀ imm. Iris brown; bill pinkish horn-coloured; feet dark reddish-brown.

The beautiful little Shaft-tailed Widow-bird was almost always to be seen in the Kalahari around the water-holes, but was never found far from water. It is an extremely lively bird, and the males may constantly be seen chasing each another. During the winter months it is met with in small flocks.

QUELEA QUELEA (Linn.).

Quelea quelea Stark, i. p. 122.

a. ♂. Lake Ngami, 2700 ft., 5th July. (No. 543, *G. L.*)

Iris hazel; bill pink; feet brown.

During the winter months the number of Red-billed Weaver-Finches in Ngamiland is quite incredible. They assemble in enormous flocks, and spend the day feeding in the dry bush and cultivated lands. Towards sunset they return to roost in the vast reed-beds of the Okavango marshes, and it is then that one realizes their numbers. For many miles along the edge of the marshes the air is filled with an incessant stream of birds, the flocks varying in size from a few hundred individuals to hundreds of thousands.

SPOROPIPES SQUAMIFRONS (Smith).

Sporopipes squamifrons Stark, i. p. 86.

a, b. ♂. Molopo River, 3000 ft., 20th April. (Nos. 31, 32, *R. B. W.*)

Iris dark brown; bill brown or pinkish; feet grey-brown.

Vast numbers of the Scaly-feathered Weaver-Finch were always to be found in the dry pans of the Kalahari, where they congregate to feed on the seeds of the fine grasses.

PYTELIA MELBA (Linn.).

Pytelia melba Stark, i. p. 89.

a. ♂. Botletle River, 3000 ft., 1st Dec. (No. 63, *G. L.*)

b. ♀. Lake Ngami, 2700 ft., 6th July. (No. 52, *R. B.W.*)

♂. Iris hazel; bill red; feet grey.

♀. Iris chestnut; bill red; feet brown.

The Southern Red-faced Weaver-Finch was not a very common bird in Ngamiland, but was more numerous towards the south of the Botletle River. As, however, it generally frequents thick bush, and is not often seen, it may be more plentiful than I supposed. I have never been able to identify the note of any species of *Pytelia*.

URÆGINTHUS DAMARENSIS Reich.

Uræginthus bengalus damarensis Reich. iii. p. 209.

a, b. ♂ ♀. Tsau, 2700 ft., 30th June. (Nos. 523, 524, *G. L.*)

Iris hazel; bill dull purple; feet brown.

This bird is distinctly paler than typical *U. angolensis* (Linn.). Hitherto the British Museum possessed only two examples, procured respectively at Elephant Vley, Damaraland, and Ondonga, Ovampoland, by C. J. Andersson.

The Damaraland Cordon-bleu was not uncommon in Ngamiland, frequenting chiefly the thickets of bush along the edges of the marshes.

URÆGINTHUS GRANATINUS (Linn.).

Estrilda granatina Stark, i. p. 104.

Uræginthus granatinus Reich. iii. p. 210.

a, b. ♂ imm. Lehutitu, 3000 ft., 21st-30th May. (Nos. 509, 516, *G. L.*)

c. ♀ imm. Molopo, 3000 ft., 25th April. (No. 503, *G. L.*)

Iris hazel; bill pink; feet black.

All immature birds; the males are especially interesting,

being in a transitional stage, with the adult plumage partially assumed on the head and throat only.

The Grenadine Waxbill was met with commonly in Ngamiland and the Kalahari. It seems to prefer arid stony country with low scrubby thorn-bush rather than the neighbourhood of much water. I have never seen this Finch in flocks. I found a nest in mid-winter which I am almost certain belonged to this bird; it was placed in a low thorn-bush, and was loosely built of fine grass, with a domed top. It contained two white eggs. I believe that many of the small Finches sometimes nest in South Africa in mid-winter.

TEXTOR NIGER (Smith).

Textor niger Stark, i. p. 78.

a, b. ♂ imm. Tsau, 2700 ft., 30th June. (Nos. 527, 528, *G. L.*)

c, d. ♂. Lake Ngami, 2700 ft., 2nd July. (Nos. 537, 538, *G. L.*)

Iris brown; bill orange; feet pale orange in the adult, dark orange-brown in the immature.

The Buffalo Weaver-Finch was not met with until we reached Ngamiland, where it was plentiful. It chiefly frequents the big trees in the neighbourhood of water. Some large flocks were seen in the early part of August, while at the same time others were busily engaged in building or repairing the nests, which are large untidily built structures of thin sticks, placed high up in the tall trees. There are generally several in the same tree. This is a noisy bird, but some of its notes are not unmusical.

PLOCEIPASSER MAHALI Smith.

Ploceipasser mahali Stark, i. p. 83.

Plocepasser mahali Reich. iii. p. 11.

a. ♀. Molopo River, 3000 ft., 9th April. (No. 5, *R. B. W.*)

Iris hazel; bill and feet horn-coloured.

The White-browed Weaver-bird was met with everywhere in the bush-country of Bechuanaland. It is a lover of acacia-trees especially, and usually builds in them. The

nest is more untidy than that of any other species of Weaver-bird, and the ends of the grass are left sticking out in all directions. It is an interesting fact that these birds seem to inhabit their nests all the year round, roosting in them during the winter, when the fiercest battles often take place over disputed possession. I have occasionally heard them singing delightfully in November.

HYPHANTORNIS XANTHOPS Hartl.

Hyphantornis jamesoni Stark, i. p. 65.

Hyphantornis xanthops Ogilvie-Grant, Trans. Zool. Soc. xix. p. 278 (1910).

a, b. ♂ ♀. Lake Ngami, 2700 ft., 12th July. (Nos. 61, 62, R. B. IV.)

Iris cream-coloured; bill black; feet brown.

A few examples of Jameson's Weaver-bird were seen on the densely-wooded islands in the Okavango marshes, but they were rather uncommon. They seemed to keep almost entirely to the larger trees, especially to those which had festoons of creepers hanging from them.

HYPHANTORNIS COLLARIS (Vieill.).

Ploceus collaris Reich. iii. p. 61.

a. ♂ imm. Lake Ngami, 2700 ft., 3rd July. (No. 510, G. L.)

Iris hazel; bill black; feet brown.

This immature specimen of a Weaver-bird in freshly-moulted plumage appears to be referable to *H. collaris*. It agrees in most of the essential points, especially in the colour of the bright canary-yellow wing-lining and under wing-coverts; the bill is somewhat shorter and smaller than in any specimen in the British Museum Collection, but there are no young birds of a similar age for comparison. The primaries are rather distinctly edged with yellow, but are in no way worn; the sides and flanks are brownish-buff, a character of immaturity.

PASSER MOTITENSIS Smith.

Passer motitensis Stark, i. p. 162; Reich. iii. p. 240.

a. ♀. Lehutitu, 3000 ft., 19th May. (No. 507, G. L.)

Iris dark brown ; bill and feet black.

This Sparrow was often seen in the neighbourhood of Lehutitu, among the low thorn-bushes surrounding the salt-pans. It is rather a conspicuous bird, and was frequently to be seen perched on top of a bush uttering a peculiar loud whistle.

PASSER DIFFUSUS Smith.

Passer diffusus Ogilvie-Grant, Trans. Zool. Soc. xix. p. 304 (1910).

a. ♀. Molopo River, 3000 ft., 20th April. (No. 26, R. B. W.)

Iris brown ; bill black ; feet brown.

The Southern Grey-headed Sparrow, although nowhere very numerous, is pretty universally distributed throughout the Kalahari ; I noticed more along the Molopo River than elsewhere.

Dr. Reichenow has separated examples of the Sparrow from Damaraland, &c., under the name of *georgicus* [cf. Vög. Afr. iii. p. 231].

MIRAFRA AFRICANOIDES Smith.

Mirafra africanoides Stark, i. p. 210 ; Shelley, iii. p. 58 ; Reich. iii. p. 333.

a. ♀. Lehutitu, 3000 ft., 15th May. (No. 38, R. B. W.)

b. ♂. Okwa, 3000 ft., 6th June. (No. 518, G. L.)

Iris hazel ; bill brown ; feet brown.

The Fawn-coloured Lark is found throughout the Kalahari, frequenting the most arid and waterless tracts of the more open bush-veldt. It is generally found singly or in pairs, and is rather a shy bird. It has a very sweet song. I once wounded one of these Larks and could not find it in the grass. While searching for it I suddenly heard, almost at my feet, a low sweet song, and I then saw the missing Lark standing under a small bush and singing as if its life depended on it. It had a broken wing, and it thought, I am certain, that if it could conceal this from me I should not attempt to catch it. I have twice had a similar experience with this species, and I never felt more like an assassin.

MIRAFRA SABOTA Smith.

Mirafra sabota Stark, i. p. 208; Shelley, iii. p. 36; Reich. iii. p. 332.

a, b. ♂. Lehutitu, 3000 ft., 15th & 19th May. (Nos. 39, R. B. W., & 508, G. L.)

Iris hazel or brown; bill horn-coloured; feet brown.

The Sabota Lark was fairly common in the Kalahari and Ngamiland. It perches a great deal upon bushes and in trees.

MIRAFRA RUFOPILEA (Vieill.).

Mirafra rufopilea Stark, i. p. 218; Shelley, iii. p. 46; Reich. iii. p. 342.

a. ♂. Lehutitu, 3000 ft., 29th May. (No. 513, G. L.)

Iris hazel; bill black; feet brown.

This is a quite freshly-moulted example of *M. rufopilea* with the general colour of the upper parts greyish; the chestnut and black-barred middles of the feathers are almost entirely masked by the long greyish lateral fringes, which give a hoary appearance to the plumage. The pale cinnamon feathers of the breast and belly also have much paler margins, giving the under parts a paler appearance. At first sight this specimen appears so different from the specimens of *M. rufopilea* in the British Museum that it might easily be mistaken for a desert form; but I am satisfied that this is not the case.

This group of Larks is but sparsely represented in the Kalahari or Ngamiland, as there is too much forest country to suit their habits.

CERTHILAUDA KALAHARIE, sp. n.

? *Certhilauda rufula*, Fleck (nec Vieill.), J. f. O. 1894, p. 411.

Adult male. Most nearly allied to *C. arenaria* Reich. from Great Namaqualand, but differs in having the general colour of the upper parts (with the exception of the upper tail-coverts, which are rufous) brown instead of rufous. Each feather of the mantle and back is dark brown down the shaft, paler brown towards the edge, and fringed on the sides with pale isabelline, likewise tipped with white. Iris hazel:

bill horn-coloured; feet dull flesh-coloured. Wing 3·6; tail 2·2 inches.

The specimens of *C. arenaria* with which the present bird has been compared were killed by Andersson in Great Namaqualand at exactly the same time of year, 20th to 29th of May, 1862-64; the differences between the two forms is very marked.

Hab. North Kalahari.

Type in the British Museum. ♂. No. 43. Lehutitu, 29. v. 09. R. B. Woosnam Coll.

The Kalahari Long-billed Lark was seen occasionally in the more open parts of the Kalahari, but not in Ngamiland.

ANTHUS RUFULUS Vieill.

Anthus rufulus Shelley, ii. p. 319.

Anthus rufulus cinnamomeus Reich. iii. p. 313.

a. ♂. Lake Ngami, 2700 ft., 1st July. (No. 530, *G. L.*)
Iris, bill, and feet brown.

This bird, a freshly-moulted specimen, has the general colour of the plumage of the upper parts much greyer than is usual in *A. rufulus*, and in this respect closely resembles *A. campestris*. It has the chest, however, strongly streaked with black.

The Lesser Tawny Pipit was not uncommon in Ngamiland on the open grass-flats and cultivated native lands. I have occasionally heard it sing a short but quite melodious song, while perched on some low bush.

ANTHUS PYRRHONOTUS (Vieill.).

Anthus pyrrhonotus Stark, i. p. 250; Shelley, ii. p. 307.

Anthus leucophrys Reich. iii. p. 316.

a. ♀. Lake Ngami, 2700 ft., 1st July. (No. 531, *G. L.*)

Iris, bill, and feet brown.

MACRONYX AMELIÆ Tarrag.

Macronyx ameliæ Stark, i. p. 240; Reich. iii. p. 324.

a. ♂ imm. Mababe Flats, 3000 ft., 30th July. (No. 74, *R. B. W.*)

Iris, bill, and feet dark brown.

This example, in immature plumage, has the feathers of the throat and breast orange mixed with carmine, especially the former. The chest-band is buff streaked with black, producing a spotted appearance.

Only a single pair of Pink-throated Long-claws was met with in Ngamiland. They were found on a broad open flat surrounded by marsh-land. It is curious that in a country apparently so suitable for these birds no other specimens should have been seen.

CINNYRIS MARIQUENSIS Smith.

Cinnyris mariquensis Stark, i. p. 279 ; Reich. iii. p. 479.

a. ♂. Mababe Flats, 3000 ft., 9th Aug. (No. 87, R. B. W.)

Iris dark brown ; bill and feet black.

Dr. Reichenow has separated Damaraland examples of this species under the name of *C. m. oramboensis* (cf. Vög. Afr. iii. p. 480), but the distinguishing characters attributed by him to this form are not borne out by specimens in the British Museum.

Only a single specimen of this Sun-bird was seen in Ngamiland. It was flying about the tops of the trees in the mopani forest near the marshes, but as the season was mid-winter and the leaves were falling, this seemed a curious place for a Sun-bird to be searching for food.

ANTHOTHREPTES ZAMBESIANA (Shelley).

Anthothreptes zambesiana Ogilvie-Grant, Ibis, 1909, p. 286 ; id. Trans. Zool. Soc. xix. p. 320 (1910).

♂. Mababe Flats, 2900 ft., 24th July. (No. 66, R. B. W.)

Iris dark brown ; bill and feet black.

This Collared Sun-bird was not at all common in Ngamiland in winter, but it is possible that during the summer months there may be some visitors from the Zambesi. It was seen only on the densely forested islands in the marshes north of the Lake, where there were masses of flowering creepers on the trees.

PARUS CINERASCENS Vieill.

Parus intermedius Shelley, Birds Afr. ii. pp. 223, 243 (1900).

Parus parvirostris Shelley, l. c. pp. 223, 243.

Parus afer damarensis Reich. Orn. Monatsb. x. p. 77 (1902).

Pentheres cinerascens Sharpe, Ibis, 1904, pp. 342, 343.

a. ♂. Molopo River, 3000 ft., 8th April. (No. 3, R. B. IV.)

Iris dark brown; bill black; feet grey.

The Titmouse procured by Mr. Woosnam is no doubt an example of the true *P. cinerascens* Vieill. Sharpe, in the paper quoted above, has shown that the S. African species have been confused by Shelley (Birds Afr. ii. p. 240), who described the present species as *P. afer*, which is really a brown-backed form. This species was subsequently re-described by Dr. Reichenow as *P. a. damarensis*.

P. parvirostris Shelley is founded on an immature example of *P. cinerascens* with a smaller bill, and the feathers of the crown dull black, both signs of immaturity.

The Grey Titmouse was met with sparingly throughout the Kalahari in the acacia-forest, and was not common in Ngamiland. I have found it in the Orange River Colony in the most barren country, among kopjes, far from any trees or bushes.

PARUS NIGER Vieill.

Parus niger Stark, i. p. 307; Reich. iii. p. 510.

a. ♂. Mababe Flats, 2900 ft., 24th July. (No. 70, R. B. IV.)

b. ♂. Lake Ngami, 2700 ft., 5th Sept. (No. 97, R. B. IV.)

Iris dark brown; bill black; feet dark grey.

No Black Titmice were met with during the journey through the Kalahari, but a few were seen in Ngamiland; they seemed chiefly to frequent the mopani forest towards the north-east of the Lake.

ANTHOSCOPUS SMITHI (Jard. & Selby).

Anthoscopus smithi Sharpe, Ibis, 1904, pp. 344-345.

Anthoscopus minutus Reich. iii. p. 526.

a, b. ♂ ♀. Molopo River, 3000 ft., 19th April. (Nos. 19, 20, *R. B. IV.*)

Iris dark brown; bill and feet dark grey.

In his paper on the birds from the District of Deelfontein, in Cape Colony, the late Dr. Sharpe very clearly shewed the differences between *A. minutus* Shaw and *A. smithi* Jard., and cleared up the general muddle which had previously existed (*cf.* 'Ibis,' 1904, pp. 343-5). Unfortunately, Dr. Reichenow (Vög. Afr. iii. p. 526), writing immediately afterwards, transferred the name of *A. minutus* to the bird from the Transvaal, which Sharpe had called *A. smithi*, while the bird from the Cape Colony, which Sharpe shewed to be the *A. minutus* Shaw, Dr. Reichenow has renamed *A. m. levaillanti* Reich. He has further separated the birds from Damaraland as *A. m. damarensis*. I cannot agree with Dr. Reichenow's reasons for making these changes, and think that Sharpe's conclusions were perfectly correct. In any case, the Damaraland birds cannot possibly be distinguished from specimens of *A. smithi* from the Transvaal. After comparing nearly a dozen specimens from each of these localities, I find that any slight differences in the two series are purely individual. Freshly-moulted birds, such as those in the present collection, are always lighter and greyer on the head and mantle than those in more worn plumage.

A few small parties of this Penduline Titmouse were met with in the acacia-forest along the Molopo River; but as we travelled north it seemed to disappear, and was not seen in Ngamiland, where its place is taken, according to Stark, by Andersson's Penduline Tit (*A. caroli*).

LANIARIUS ATROCOCINEUS (Burch.).

Laniarius atrococcineus Stark, ii. p. 31; Reich. ii. p. 587.

a. ♂. Molopo, 3000 ft., 25th April. (No. 504, *G. L.*)

Iris dark brown; bill and feet black.

The Black and Crimson Shrike was met with throughout the whole of the Kalahari, and was plentiful in Ngamiland. It has a loud flute-like note, generally uttered from the middle of some dense thorn-bush, and although so brightly coloured it is difficult to see and still more difficult to get near.

LANIARIUS GUTTATUS Hartl.

Dryoscopus guttatus Stark, ii. p. 28.

Laniarius major guttatus Reich. ii. p. 581.

a, b. ♂ ♀. Lake Ngami, 2700 ft., 2nd July. (Nos. 534, 535, G. L.)

Iris dark brown ; bill black ; feet dark slate-coloured.

Hartlaub's Shrike was not met with until we reached Ngamiland, where it was not uncommon. It is usually to be seen singly or in pairs, but sometimes in small parties. It has a great variety of chattering or clicking notes, and the male occasionally utters a beautiful long-drawn bell-like note which can be heard at a great distance.

DRYOSCOPIUS CUBLA HAMATUS Hartl.

Dryoscopus cubla hamatus Reich. ii. p. 594.

a, b. ♂ ♀. Tamalakan R., 2700 & 3000 ft., 22nd July and 24th August. (Nos. 96, R. B. W. ; 561, G. L.)

Iris orange ; bill black, light in female ; feet grey.

This Shrike was not met with during our journey through the Kalahari ; it has a rather striking note, which was not heard until the mopani forest north-east of the Lake was reached. There individuals were not uncommon.

TELEPHONUS AUSTRALIS (Smith).

Telephonus australis Stark, ii. p. 22.

Pomatorhynchus australis Reich. ii. p. 544.

a. ♂. Lehutitu, 3000 ft., 15th May. (No. 506, G. L.)

Iris grey ; bill black ; feet grey.

The sexes of the Three-streaked Bush-Shrike are generally described as being alike in plumage ; but the adult male appears to differ from the adult female in having the crown dark ashy-brown instead of earthy-brown.

UROLESTES MELANOLEUCUS (Jard. & Selby).

Urolestes melanoleucus Stark, ii. p. 3; Reich. ii. p. 627.

a, b. ♀. Lake Ngami, 2700 ft., 9th & 10th July. (Nos. 553, 554, *G. L.*)

Iris dark brown; bill and feet black.

The Long-tailed Shrike is plentiful along the Molopo River. From thence northwards it is met with sparingly throughout the Kalahari to Ngamiland, where it is very numerous; it also occurs along the Botletle River. It has a loud note and also a scolding chattering one. It is fond of perching during the heat of the day on the lower boughs of umbrella-like acacia-trees, and is then rather less noisy than in the mornings and evenings.

NILAUS BRUBRU (Lath.).

Nilaus brubru Stark, ii. p. 16; Reich. ii. p. 538.

a-c. ♂ ♀. Molopo River, 3000 ft., 12th & 19th April. (Nos. 9, 10, 25, *R. B. W.*)

Iris dark brown; bill black, lower mandible lighter; feet grey.

The Brubru Shrike was found plentifully along the Molopo River and here and there throughout the Kalahari northwards to Ngamiland. Stark writes that this Shrike is rather a silent bird, while *N. nigritemporalis*, the more northern form, according to Alexander, has a loud note. All the Brubru Shrikes I have met with in S. Africa, including the three specimens mentioned here, had a strikingly loud note.

EUROCEPHALUS ANGUITIMENS Smith.

Eurocephalus anguitimens Stark, ii. p. 13; Reich. ii. p. 525.

Ad. Lake Ngami, July. (*G. L.*)

PRIONOPS TALACOMA Smith.

Prionops talacoma Stark, ii. p. 51; Reich. ii. p. 528.

a. ♂. Mababe Flats, 2900 ft., 24th July. (No. 69, *R. B. W.*)

Iris yellow; bill black; feet red-brown.

A few of these Helmet-Shrikes were seen in the mopani

forest north-east of Lake Ngami, but they were not very common. Even towards the end of the winter they were still in small parties.

CALAMOCICHLA GRACILIROSTRIS Hartl.

Bradypterus babœcula Stark (nec Vieill.), ii. p. 102.

Luscinola gracilirostris Reich. iii. p. 583.

Calamocichla gracilirostris Neumann, Nov. Zool. xv. p. 249 (1908).

a. ♀. Mababe Flats, 3000 ft., 10th August. (No. 88, R. B. W.)

Iris brown; bill brown; feet black.

This Reed-Warbler appeared to be pretty common in the Okavango marshes, but as it always kept to the middle of the dense beds of tall reeds it was more often heard than seen, and was very difficult to procure.

BRADYPTERUS BEDFORDI, sp. n.

Adult male. Differs from *B. brachypterus* (Vieill.) in having the general colour above much darker, deep sooty-brown, with a slight rufous tinge most marked on the upper tail-coverts; the under parts are dull silvery white (almost tinged with greyish) except the flanks and under tail-coverts which are dull brownish-buff. The wing-coverts have very distinct whitish-brown margins and the outer tail-feathers are blackish with strongly contrasting buff tips. Iris hazel; bill and feet dark olive-grey.

Total length 140 mm.; wing 57; tail 62; tarsus 23.

Hab. Mababe Flats, north of Lake Ngami.

Type in the British Museum. ♂. No. 71. Mababe, 25. vii. 09. R. B. Woosnam Coll.

This is a most interesting bird, and apparently very distinct from all other known species of the group.

Only one example of this Reed-Warbler was met with in Ngamiland. It was seen early one morning on the edge of the marshes perched on the top of a reed and vigorously giving forth its loud notes, so unmistakably *Bradypterus*-like, that it aroused my cupidity.

Probably it is not such an uncommon bird as we thought.

for we visited Ngamiland in winter, when its song would seldom be heard. Without its note to guide us, the bird might long escape notice, owing to its habit of skulking in thick cover.

PRINIA FLAVICANS (Vieill.).

Prinia flavicans Stark, ii. p. 136 ; Reich. iii. p. 592.

a, b. ♂ ♀. Molopo River, 3000 ft., 20th April. (Nos. 27, 28, *R. B. W.*)

c, d. ♂ & ♂ imm. Kakia, 3000 ft., 6th May. (Nos. 34, 35, *R. B. W.*)

e. ♀ imm. Lehutitu, 3000 ft., 19th May. (No. 41, *R. B. W.*)

Iris hazel ; bill black ; feet brown.

The Black-chested Wren-Warbler is found throughout the Kalahari. It frequents the patches of open country or low bush, especially around the large salt-pans. It is a very active lively little bird, constantly on the move from one bush to another, and frequently perching on the top. It jerks its long tail up over its back, and utters a stream of clicking notes, like the sound made by the winding of a large fishing-reel.

PRINIA MYSTACEA Rüpp.

Prinia mystacea Stark, ii. p. 135 ; Reich. iii. p. 590.

a-c. ♂. Tamalakan River, 2700 ft. and 3000 ft., 22nd July & 24th Aug. (Nos. 64, 94, 95, *R. B. W.*)

d-h. ♂ ♀. Mababe Flats, 3000 ft., 6th-9th Aug. (Nos. 75, 79, 82, 83, 86, *R. B. W.*)

Iris hazel or light brown ; bill black ; feet light brown.

These Wren-Warblers were particularly plentiful along the edges of the Okavango marshes ; they were always seen in small parties, and upon being disturbed from the grass or rushes would fly up into the trees and there remain hopping about and scolding incessantly at the intruder until he moved away. Both male and female join in this remonstrance ; there is considerable difference in their notes, that of the female being generally shriller.

CISTICOLA RUFILATA Hartl.

Drymoica rufilata Hartl. Vög. Ost-Afr. p. 238 (1870);
Gurney in Andersson, Birds Damaraland, p. 87 (1872).

Cisticola chiniana Reich. iii. p. 546 [part.].

a. ♀. Molopo River, 3000 ft., 19th April. (No. 21, R. B. W.)

Iris hazel; bill dark horn-coloured; feet flesh-coloured.

This very distinct species of Grass-Warbler was founded by Hartlaub on birds obtained by Andersson in Damaraland. By Sharpe (Cat. B. Brit. Mus. vii. p. 233) it was regarded as synonymous with *C. subruficapilla* (Smith), and by Dr. Reichenow is included under *C. chiniana* (Smith). The British Museum now possesses a considerable series of examples of this species, and they are very easily distinguished by the light chestnut colour of the head and tail-feathers. The wing in males varies from 66–69 mm. and in females from 54–59 mm.

This bird was common among the grass and scrub on the banks of the Molopo in places where it was not too heavily timbered. This was the only specimen obtained with so red a tail: there was nothing in its notes or habits to separate it from other species.

CISTICOLA CISTICOLA UROPYGIALIS (Fras.).

Cisticola cisticola uropygialis Reich. iii. p. 556.

a. ♀. Mababe Flats, 3000 ft., 30th July. (No. 73, R. B. W.)

Iris, bill, and feet brown.

Only one specimen of this form of the Mediterranean Grass-Warbler was obtained in Ngamiland, but it is probably not uncommon. It seems to frequent comparatively marshy ground with long rough grass or rushes in preference to the dry open bush-veldt.

CISTICOLA KALAHARI Ogilvie-Grant.

Cisticola kalahari Ogilvie-Grant, Bull. B. O. C. xxv. p. 121 (1910).

a-c. ♂ ♀. Molopo River, 3000 ft., 16th & 20th April. (Nos. 29, 30, R. B. W., & 502, G. L.) [Types of the species.]

d, e. ♂. Mababe Flats, 3000 ft., 24th & 30th July. (Nos. 67, 72, *R. B. IV.*)

The adult male and female are most nearly allied to *C. lavendule* Ogilvie-Grant from the Somaliland coast, but differ in having the general colour of the upper parts somewhat darker, the basal half of the feathers being dark grey instead of whitish, and the rump pale rufous-buff, contrasting with the colour of the back. The bird resembles *C. lavendule* in the shape of the wing, the first primary being comparatively short and narrow, while the third and fourth are longest, slightly longer than the second. The iris is hazel; bill horn-coloured and feet flesh-coloured in April, light brown in July.

Male. Total length 102 mm.; wing 52; tail 38; tarsus 20.

Female. Total length 97 mm.; wing 47; tail 36; tarsus 19.

These little Grass-Warblers were met with throughout the Kalahari wherever there was open country. They have a curious habit of flying to a great height with a succession of quick jerky wing-beats, each jump being accompanied by a sharp clicking note; this is their most conspicuous feature. They seem to prefer dry grass-country to low-lying marshy ground, where *C. cisticola uropygialis* is more often met with.

CISTICOLA TINNIENS (Licht.).

Cisticola tinniens Stark, ii. p. 147; Reich. iii. p. 551.

a, b. ♀. Mababe Flats, 3000 ft., 10th & 15th Aug. (Nos. 89, *R. B. IV.*, & 581, *G. L.*)

c, d. ♂. Tamalakan River, 2700 ft., 22nd July. (Nos. 63, *R. B. IV.*, & 560, *G. L.*)

Iris hazel; bill dark brown, lower mandible lighter; feet light brown.

Levaillant's Grass-Warbler is very numerous throughout the Okavango marshes; it may sometimes be seen among the thick belts of bush bordering swampy ground, but it principally frequents the tall belts of papyrus and pampas grass along the watercourses. It has a great variety of loud notes, many of which resemble those of other birds.

CISTICOLA SUBRUFICAPILLA (Smith).

Cisticola subruficapilla Stark, ii. p. 151; W. L. Sclater, Ibis, 1911, p. 313.

a-g. ♂ ♀. Mababe Flats, 3000 ft., 24th July–9th Aug. (Nos. 68, 76, 77, 78, 79, 84, 85, *R. B. W.*)

Iris hazel; bill light brown, under mandible darker; feet light brown.

Specimens of the Western Grey-backed Grass-Warbler killed in July and August present, on the whole, a very uniform appearance, the black stripes on the feathers of the upper parts being narrower than in examples of the more eastern *C. chiniana* Smith; the under parts of the body also are distinctly greyer and less buff, especially on the sides and flanks.

This *Cisticola* is a lover of bushes and rough ground in the neighbourhood of water, but in my experience it never frequents the reed-beds, and I have often found it at considerable distances from water. It is a very fearless little bird and its general habits much resemble those of the Common Hedge-Sparrow; the only note I have heard it utter is a low scolding one like that of the Marsh-Titmouse.

SYLVIELLA RUFESCENS FLECKI Reich.

Sylviella rufescens Stark, ii. p. 115 [part.].

Sylvietta flecki Reich. iii. p. 626, pl. xxiii. fig. 4.

a-c. ♂. Molopo River, 3000 ft., 19th April. (Nos. 16, 17, 18, *R. B. W.*)

d, e. ♀. Lake Ngami, 2700 ft., 28th June & 3rd July. (Nos. 49, *R. B. W.*, & 539, *G. L.*)

Iris hazel; bill dark horn-coloured; feet reddish-brown.

All the specimens in the present collection are referable to the rather paler western form of this Crombec, which has the upper parts greyer and the under parts usually of a paler buff; though in the latter respect some individuals from Damaraland are not distinguishable from some of the paler-breasted examples of typical *S. rufescens* (Vieill.) from the Transvaal.

This Crombec is rather a curious little bird, usually frequenting low scrub, but I have occasionally seen it high

up in tall trees creeping along the boughs like a Nuthatch. It keeps up an incessant twittering note.

CAMAROPTERA SUNDEVALLI Sharpe.

Camaroptera sundevalli Stark, ii. p. 113.

Camaroptera griseociridis sundevalli Reich. iii. p. 618.

a. ♂. Lake Ngami, 2700 ft., 28th June. (No. 48, R. B. W.)

Iris hazel; bill dark horn-coloured; feet brown.

Sundevall's Bush-Warbler was not seen in the Kalahari, but in Ngamiland it was plentiful. I could find no difference between the notes and habits of this species and those of *C. griseociridis* from Uganda and the Congo. Its note is exactly like that of the Common Stonechat and its habits like those of the Common Wren.

EREMOMELA FLAVIVENTRIS (Burch.).

Eremomela flaviventris Stark, ii. p. 106; Reich. iii. p. 634; Ogilvie-Grant, Bull. B. O. C. xxv. pp. 120, 121 (1910).

a, b. ♂ ♀. Molopo River, 3000 ft., 19th April. (Nos. 14, 15, R. B. W.)

Iris hazel; bill and feet blackish.

The range and synonymy of this species will be found fully discussed in my paper quoted above.

The Yellow-bellied Bush-Warbler was only seen on the Molopo River, and is apparently an uncommon bird. Its habits do not differ, so far as I have observed them, from those of other members of the genus.

EREMOMELA USTICOLLIS Sund.

Eremomela usticollis Stark, ii. p. 109; Reich. iii. p. 641.

a-c. ♂ ♀. Molopo River, 3000 ft., 12th April. (Nos. 7, 8, 12, R. B. W.)

d-f. ♂ ♀. Lake Ngami, 2700 ft., 8th July. (Nos. 55, 56, 57, R. B. W.)

Iris pale yellow; bill and feet light brown.

Generally speaking, examples from the Transvaal are rather more strongly marked with buff on the breast and belly than those from Damaraland, but the difference is not constant, and the western birds ought not to be separated.

This little Bush-Warbler was obtained on the Molopo River and again in Ngamiland, but was not observed in the dry Kalahari. It is generally to be seen in small parties up to six or seven, which, in my experience, always frequent the topmost branches of acacia and other trees, where they are very active in their search for small insects.

APALIS FLAVIDA (Strickl.).

Chlorodyta flavida Stark, ii. p. 125.

Apalis flavida Reich. iii. p. 611.

a. ♂. Tamalakan River, 2700 ft., 22nd July. (No. 66, *R. B. W.*)

b. ♂. Mababe Flats, 3000 ft., 8th August. (No. 80, *R. B. W.*)

Iris very light hazel; bill black; feet dark brown.

Stark's description of this species is misleading in several particulars: the chin is white, not yellow; there is no spot of dusky in front of the eye; nor are there purer yellow patches on either side of the rump.

The Yellow-throated Bush-Warbler was not uncommon in Ngamiland, chiefly frequenting the mixed forest along the edges of the marshes and not the drier acacia-forest. It has a surprisingly loud note for so small a bird.

SPILOPTILA MALAPOENSIS Sharpe.

Spiloptila malapoensis Sharpe, Bull. B. O. C. xiii. p. 80 (1903).

a, b ♂ ♀. Lchutitu, 3000 ft., 29th May. (Nos. 40, 42, *R. B. W.*)

Iris hazel; bill black; feet brown.

This Wren-Warbler is a rather paler form of *S. ocularis* Smith.

Sharpe gives the locality of the type as "Malope River, Mashonaland," but he should have written Southern Bechuanaland. In 'The Ibis,' for 1882, p. 237, Shelley publishes a list of the localities visited by Jameson, and the "Malope River" is placed at "lat. 25° 45', long. 25° 35'," which shews that the Molopo River of modern maps is the spot indicated.

GEOCICHLA LITSIPSIRUPA (Smith).

Turdus litsipsirupa Stark, ii. p. 173.

Geocichla litsipsirupa Reich. iii. p. 679.

a. ♂. Molopo River, 3000 ft., 12th April. (No. 11, R. B. IV.)

b. ♀. Lake Ngami, 2700 ft., 10th July. (No. 556, G. L.)

Iris dark brown; bill, ♂ dark brown, ♀ black; feet, ♂ pale greenish-yellow, ♀ light brown.

This Thrush was seen along the Molopo River and in Ngamiland, but not during the journey through the Kalahari. It is almost always found in pairs, and its habits closely resemble those of the Common Thrush, except that when disturbed from the ground it usually flies up to some conspicuous place at the top of a tree. It is rather a wild bird, and I have never heard it sing.

COSSYPHA HEUGLINI Hartl.

Cossypha heuglini Stark, ii. p. 211; Reich. iii. p. 760.

a. ♀. Lake Ngami, 2700 ft., 11th July. (No. 558, G. L.)

Iris dark brown; bill black; feet dark brown.

The occurrence of this Robin-Chat at Lake Ngami greatly extends its known range, but is not surprising, as many of the species met with on the Zambesi make their way westwards along the Botletle River to the Lake.

Heuglin's Robin-Chat was not met with until Ngamiland was reached; here a few were seen or heard on the heavily-wooded tropical-looking islands in the Okavango marshes. They were not breeding during our winter visit to Ngamiland, and consequently the beautiful song of the male bird was not to be heard; but even when not in song this bird utters a variety of loud and musical notes in the early morning and evening.

ERYTHROPYGIA PAENA Smith.

Erythropygia paena Stark, ii. p. 223.

Erythropygia paena Reich. iii. p. 772.

a. ♂. Molopo River, 3000 ft., 19th April. (No. 22, R. B. IV.)

Iris dark brown ; bill and feet black.

This is a fine male in freshly-moulted plumage, with the crown and nape grey ; as the ends of the feathers become worn the dark bases become more or less visible, and the general colour of the crown becomes browner during the breeding-season, which is in January. In the present specimen the throat as well as the middle of the breast and belly are purer white than in birds in worn plumage.

This Ground-Robin was met with throughout the Kalahari where there was suitable ground. It seems to prefer stony barren soil and low thorn-scrub to the larger acacia-trees. It is usually to be seen skulking about at the bottoms of the bushes, but the male often sings a not unpleasant short song from the top of some bush or low tree.

SAXICOLA PILEATA LIVINGSTONII (Tristram).

Saxicola pileata livingstonii Stark, ii. p. 198.

Saxicola pileata Reich. iii. p. 718 [part.].

a. ♂. Okwa, 3000 ft., 6th June. (No. 517, *G. L.*)

b, c. ♂ ♀. Lehutitu, 3000 ft., 25th & 29th May. (Nos. 511, 514, *G. L.*)

Iris dark brown ; bill and feet black.

This form is distinguished from typical *S. pileata* by its smaller size and shorter bill ; also, the white band on the forehead is narrower, and the back is darker and of a more reddish-brown.

We found Livingstone's Wheatear throughout the Kalahari wherever open country, such as it loves, was met with. At every dry salt-pan, although surrounded by vast tracts of dense bush-country, a pair or two were always to be seen. This Wheatear can mimic the notes of other birds in a most remarkable manner.

CRATEROPUS BICOLOR Jard.

Crateropus bicolor Stark, ii. p. 59 ; Reich. iii. p. 667.

a. ♂. Lehutitu, 3000 ft., 30th May. (No. 515, *G. L.*)

Iris hazel ; bill and feet black.

The Pied Babbler was not so plentiful in Ngamiland as Hartlaub's Babbler, and is far more numerous further south,

especially along the Molopo River. The habits of both are much alike, but the Pied Babbler is far more inquisitive, and if a person sits down in the bush and remains perfectly motionless a party of these birds is almost certain to be attracted. At first they keep at some distance, hopping nervously round and chattering incessantly; but as they gain confidence they come nearer and nearer and become less noisy, till eventually several will take up positions within a few feet and remain almost silent, turning their heads from side to side as if trying to ascertain whether the curious animal looks equally curious viewed with each eye separately! The slightest movement sends them to a distance, chattering more noisily than ever.

CRATEROPUS HARTLAUBI Bocage.

Crateropus hartlaubi Stark, ii. p. 58; Reich. iii. p. 663.

a, b. ♂. Tsau, 2700 ft., 30th June. (Nos. 525, 526, G. L.)

Iris red; bill black; feet dark slate-grey.

Hartlaub's Babbler is a very common bird in Ngamiland. It generally frequents the rather dense belts of bush which separate the mopani forest from the marshes. It seems always to be moving about in parties of from five to a dozen individuals, which are very noisy when disturbed and rather inquisitive, but not to the same extent as *C. bicolor*.

PYCNONOTUS TRICOLOR NGAMI, subsp. n.

Adult female. Most nearly allied to *P. tricolor* (Hartl.), but larger and darker. The upper parts as well as the chest and upper breast are dark sooty brown, rather darker on the head, cheeks, and throat; the lower breast and belly pure white, and sharply defined from the dark upper breast; vent and under tail-coverts clear bright yellow. Iris dark brown, bill and feet black.

Total length 8·3 inches; wing 4·25; tail 3·9; tarsus 1·1.

Hab. Lake Ngami.

Type in the British Museum. ♀. No. 536. Lake Ngami, 2700 ft., 2. vii. 09. Hon. G. Legge Coll.

Two specimens, obtained by C. J. Andersson in Damara-land, and referred by Sharpe to *P. layardi*, are certainly

referable to that species, and not to the bird from Lake Ngami [*cf.* Gurney, Anderss. Birds Damaral. p. 120, editorial note; Sharpe, Cat. Birds Brit. Mus. vi. p. 134, specs. *s* & *t*].

The Ngami Bulbul is a common bird throughout Bechuanaland, but is only found in the Kalahari in the neighbourhood of water, its presence being an almost infallible sign that water is at no great distance. In Ngamiland we noticed it was particularly fond of the soft berries of the pepper-tree.

PHYLLOSTROPHUS STREPITANS Reich.

Phyllostrophus strepitans Stark, ii. p. 72.

Phyllastrephus strepitans Reich. iii. p. 405.

Phyllastrephus capensis suahelicus Reich. iii. p. 405.

a. ♂. Tamalakan River, 3000 ft., 24th August. (No. 93. *R. B. W.*)

Iris hazel; bill dark horn-coloured; feet grey.

This form may be at once distinguished from *P. capensis* Swainson, from South Africa, by the much paler colour of the upper parts.

This Bristle-necked Bulbul was met with by the members of the Lake Ngami Expedition at the Tamalakan River, and appears to have a very wide range. It should be noted that it is this species and not *P. capensis* which occurs at Lake Ngami and also at Lake Nyasa. Examples of the so-called *P. c. suahelicus* appear to be indistinguishable from *P. strepitans*.

The only specimen of this Bulbul met with in Ngamiland was obtained in the mopani forest, north-east of the Lake.

BATIS PRIRIT (Vieill.).

Pachyprora pririt Stark, ii. p. 257.

Batis pririt Reich. ii. p. 486.

a-c. ♂ ♀. Molopo River, 3000 ft., 8th, 12th, and 25th April. (Nos. 2, 6, 33, *R. B. W.*)

Iris yellow; bill and feet black. Fresh-moulted examples have the crown and back greyer.

The Pririt Flycatcher is a common bird in the acacia-forest along the Molopo River ; it appears to prefer rather arid forest to well-watered country, and we did not obtain it in Ngamiland.

PARISOMA SUBCÆRULEUM (Vieill.).

Parisoma subcæruleum Stark, ii. p. 75.

Parisoma subcæruleum cinerascens Reich. iii. p. 519.

a. ♀. Kakia, 3000 ft., 6th May. (No. 505, G. L.)

Iris pale lemon ; bill black ; feet slate-coloured.

Dr. Reichenow has separated specimens of *P. subcæruleum* from S.W. Africa, but an examination of a large series shews that the greyer back, &c., are characteristics of freshly moulted specimens all over the bird's range.

This Tit-Babbler was met with occasionally throughout the journey across the Kalahari. It does not appear to frequent the acacia-forest or larger trees, but prefers more open country where there are patches of dense low scrubby thorn-bush and stony ground. It is always to be seen in such country around the large flat salt-pans so numerous in the Kalahari. There is really nothing the least Tit-like in the habits or notes of this bird ; indeed, it has quite a loud and pleasant song, and, unless its trivial name is given on account of its general appearance, it is difficult to see what affinity it can have to the Tits.

BRADYORNIS BENGUELLENSIS Sousa.

Bradyornis benguellensis Sousa, J. Ac. Lisb. 1886, p. 160 ; Sharpe, Ibis, 1904, p. 317.

Bradyornis infuscatus Stark, ii. p. 237 [part.].

Bradornis infuscatus Reich. ii. p. 434 [part.].

a. ♂. Lehutitu, 3000 ft., 25th May. (No. 512, G. L.)

Iris dark brown ; bill and feet black.

B. benguellensis is a pale western form of *B. infuscatus* Smith, and was originally described from Benguela. The British Museum possesses typical examples from that locality which do not appear to differ in any degree from six examples procured in Damaraland by Andersson or from the

specimen from the Kalahari in the present collection. Neither of the typical specimens from Benguela are fully adult, as may be seen by the *distinct pale margin* to the bastard primary-quill.

These Flycatchers were seen in most of the more open patches of country throughout the Kalahari. They are very shy birds and difficult to approach.

DENDROPICUS GUINEENSIS (Scop.).

Dendropicus cardinalis Stark & Selater, iii. p. 135.

Dendropicos guineensis Reich. ii. p. 192.

a, b. ♂ ♀. Lake Ngami, 2700 ft., 28th June & 10th July. (Nos. 50, *R. B. W.*, 555, *G. L.*)

c. ♂. Molopo River, 3000 ft., 19th April. (No. 23, *R. B. W.*)

Iris dark claret or chocolate; bill dark grey; feet greenish-grey.

The Cardinal Woodpecker was met with in the Kalahari and Ngamiland wherever there was forest. It seems to prefer acacia-trees in rather dry districts to the more tropical country north of the lake.

CAMPOTHERA BENNETTI (Smith).

Campothera bennetti Stark & Selater, iii. p. 133.

Dendromus bennetti Reich. ii. p. 177.

a. ♂. Lehutitu, 3000 ft., 15th May. (No. 37, *R. B. W.*)

Iris crimson; bill black; feet greenish-grey.

This is a very fine adult male, with the under parts pale and the spots on the chest and breast much reduced in size. In this respect it resembles two male examples in the British Museum from Mashonaland (*Edward Clarke*) and also a specimen from the Makalaka Country. In Smith's type from Kurrichane the spots are much larger, a difference probably due to age.

This Woodpecker was seen occasionally throughout the acacia-forest in the Kalahari and also in the mopani forests of Ngamiland. I had a very remarkable experience with

one of these birds, which I had wounded. It had its wing broken close to the body. When I went to pick it up, instead of its fluttering and jumping about as birds usually do in such a condition, I found it hopping about quietly on the ground pretending to feed and pick up insects. I stood quite still and watched it closely; it was not really feeding, and was only picking up little twigs and dropping them again and frequently taking swift glances up at me to see what I was doing. Presently it came on to my boot and then climbed up my leg on to my waistcoat, going round my leg just as if it had been a tree-trunk, and pretending to pick things off while constantly peeping up at my face with its bright eyes. I have not the least doubt that the bird was playing a deliberate and very plucky game of bluff. We know that in the animal kingdom a wounded or sickly member is frequently set upon and killed by its fellows, and this bird was obviously trying to disguise its crippled condition in the hope that I should not attempt to molest it. I have had two very similar experiences with Larks (*Mirafra*). I need hardly say I was quite upset at having to kill this bird.

INDICATOR INDICATOR (Gmel.).

Indicator sparmanni Stark & Selater, iii. p. 146.

Indicator indicator Reich. ii. p. 104.

a. ♂. Mababe Flats, 3000 ft., 12th Aug. (No. 90, R. B. W.)

Iris brown; bill pink; feet dark grey.

The Honey-Guide was particularly plentiful in the mopani forest north-east of Lake Ngami. Old mopani trees afford numberless holes and cracks for bees' nests, which are very plentiful in this district, and this no doubt accounts for the numbers of Honey-Guides. In all my experiences of African travel I had never previously seen any *Indicator* lead a man to a bees' nest, but in Ngamiland I had the pleasure of following these wonderful little guides to some score of nests, from which we obtained excellent honey. Occasionally the nests were as much as half a mile from where the bird first attracted our attention. Sometimes when in camp, and

often during the march, our attention would be attracted by a little bird apparently in a great state of excitement, chattering and vibrating its half-extended wings like a young bird about to be fed. No sooner do the natives hear this than the cry of "denōtse" is raised and a party with axe and bucket at once sets out to follow the bird. It is best for one or two only to follow the bird until the nest is found, and a man well versed in its ways seldom fails. As he follows it he whistles a peculiar note, and most of the Bechuanas use the same call. The bird is distinctly elusive and seldom lets its pursuer come within twenty yards of it before it darts off to another tree and there goes through the same performance of swearing and chattering. Some birds will fly into the actual tree in which the bees' nest is placed and perch for a moment close to the hole, chattering loudly, then, as the man approaches, fly off to some tree near at hand and remain silent and invisible. Others will only fly once or twice quickly into or through the boughs of the tree and then retire and remain silent. Some, again, will suddenly disappear, and leave the man to search the neighbourhood for a likely tree, generally with success. If he fails to find the nest and retires, the bird frequently appears again and leads him to the same spot. Upon one occasion I shot the bird after finding the nest, unknown to the natives of course, and no sooner did they strike the tree with an axe than the whole swarm came out and drove us all away! I have watched for the bird to come and eat up the spoils left for it, but was never rewarded with a view.

LYBIUS TORQUATUS (Dumont).

Lybius torquatus Stark & Selater, iii. p. 157 ; Reich. ii. p. 125.

a-d. ♂ ♀. Lake Ngami, 2700 ft., 2nd & 6th July. (Nos. 532, 533, 545, 546, G. L.)

Iris hazel ; bill black ; feet black or dark grey.

The Black-collared Barbet is common in the more tropically wooded parts of Ngamiland. It has a remarkable loud flute-like note, repeated over and over again.

TRICHOLÆMA LEUCOMELAS (Bodd.).

Tricholæma leucomelas Stark & Sclater, iii. p. 160.

Tricholæma leucomelan Reich. ii. p. 134.

a. ♀. Ghanzi, 3000 ft., 16th June. (No. 520, G. L.)

Iris brown; bill and feet black.

TRACHYPHONUS NOBILIS, sp. n.

Adult male. Differs from *T. cafer* in having the bill much stouter and deeper at the base; the feathers on the lores and forehead black with dark crimson tips, instead of yellow with red tips; while the red margins to the yellow feathers on the sides of the head and throat, generally so marked in examples of *T. cafer*, are very narrow and faint. Iris, inner ring brown, outer ring crimson; bill yellow, horn-coloured at the tip; feet dull greyish-brown.

Wing 107 mm.; tail 89.

Hab. Lake Ngami, 2700 ft.

Type in the British Museum. ♂. No. 60, 12.vii.09.
R. B. Woosnam Coll.

This was the only specimen of this beautiful Barbet seen in Ngamiland. It was feeding upon the berries at the top of a tall tree on one of the islands in the Okavango marshes.

SCHIZORHIS CONCOLOR PALLIDICEPS (Neum.).

Corythaixoides concolor pallidiceps Neum. J. f. O. 1899, p. 66.

Chizærhis concolor Reich. ii. p. 34.

Schizorhis concolor Stark & Sclater, iii. p. 219.

a. ♂. Lake Ngami, 2700 ft., 8th July. (No. 551, G. L.)

Iris dark brown; bill and feet black.

This bird belongs to the rather paler-headed form found in Angola, &c., separated by Prof. Neumann under the above given name.

This Touraco is one of the commonest and most conspicuous birds in Ngamiland. It always appears to enjoy life thoroughly; its laughing note is constantly to be heard while it is feeding on the "mocochoan" berries and apparently romping with its fellows. It becomes very tame in confinement, and I knew of one which would sit on its owner's

shoulder and take food from his lips. It is a curious fact that its low and long-drawn note so exactly resembles that of a young Situtunga (*Tragelaphus spekei*) that it is almost impossible to tell them apart.

COCCYSTES HYPOPINARIUS Cabanis & Heine.

Coccytes jacobinus hypopinarius Reich. ii. p. 80.

Coccytes hypopinarius Stark & Selater, iii. p. 197.

a. ♂. Molopo River, 3000 ft., 19th April. (No. 24, *R. B. W.*)

Iris dark brown; bill black; feet greenish-grey.

This Cuckoo was commonly met with on the Molopo River, occasionally in the Kalahari, and again in Ngamiland. It was always rather a shy bird and difficult to approach.

CENTROPUS CUPREICAUDUS Reichenow.

Centropus cupreicaudus Reich. ii. p. 64; Stark & Selater, iii. p. 207.

a. ♂. Lake Ngami, 2700 ft., 10th July. (No. 557, *G. L.*)

Iris red; bill and feet black.

LOPHOCEROS LEUCOMELAS (Licht.).

Lophoceros leucomelas Reich. ii. p. 260; Stark & Selater, iii. p. 118.

a. ♂. Ghanzi, 3000 ft., 13th June. (No. 519, *G. L.*)

Iris yellow; bill orange; bare skin on the throat pinkish flesh-coloured; feet black.

This Hornbill was found plentifully on the Molopo River and in Ngamiland. It was occasionally seen in the Kalahari, but never at any great distance from water. The birds have a wonderfully buoyant flight: they will launch themselves from the top of a tree and glide for a long distance without moving their wings; when they sink too low they give a few slow flaps and then glide on again till they alight clumsily on another tree. There are often several of them together. They have a very curious but musical piping note, which they utter sitting bolt upright on a bough, with the neck fully extended, and the long bill pointed straight up to the sky. I have seen two calling simultaneously side by side and looking perfectly ridiculous.

UPUPA AFRICANA Bechst.

Upupa africana Reich. ii. p. 336 ; Stark & Selater, iii. p. 10.

a. ♂. 50 miles south of Lake Ngami, 3000 ft., 20th June. (No. 47, *R. B. W.*)

Iris, bill, and feet dark brown.

This Hoopoe was seen several times in the heart of the Kalahari, in the most arid acacia-forest.

RHINOPOMASTUS CYANOMELAS (Vieill.).

Rhinopomastus cyanomelas Reich. ii. p. 346 ; Stark & Selater, iii. p. 17.

a. ♀. Lehutitu, 3000 ft., 21st May. (No. 510, *G. L.*)

Iris dark brown ; bill and feet black.

This Wood-Hoopoe was met with on the Molopo River, and sparingly in the Kalahari, but it was nowhere a common bird. A much larger species was seen once or twice in the mopani forest N.E. of Lake Ngami, but we failed to obtain a specimen.

MELITTOPHAGUS MERIDIONALIS Sharpe.

Melittophagus meridionalis Reich. ii. p. 307 ; Stark & Selater, iii. p. 67.

a, b. ♂ ♀. Lake Ngami, 2700 ft., 1st and 9th July. (Nos. 529, 552, *G. L.*)

Iris dark red ; bill black ; feet dark grey.

This Little Bee-cater is very common in Ngamiland, and is usually to be seen perched on some reed or tall papyrus-stem overhanging the water. Generally several individuals sit close together, now and then darting off in pursuit of some passing insect.

DICROCERCUS HIRUNDINEUS (Licht.).

Dicrocercus hirundineus Reich. ii. p. 315 ; Stark & Selater, iii. p. 65.

a. ♂. Molopo River, 3000 ft., 15th April. (No. 13, *R. B. W.*)

b. ♂. Tsau, 2800 ft., 22nd June. (No. 521, *G. L.*)

Iris crimson ; bill black ; feet dark brown.

Specimen *a* of the Swallow-tailed Bee-eater is in an interesting stage of plumage, attaining the yellow throat; the yellow feathers are taking the place of the pale emerald-green plumage which distinguishes the young bird.

PŒOCEPHALUS DAMARENSIS Neum.

Poicephalus meyeri damarensis Reich. ii. p. 13.

Pœocephalus damarensis Ogilvie-Grant, Trans. Zool. Soc. xix. p. 440 (1910).

Pœocephalus meyeri Stark & Selater, iii. p. 228.

a. ♀. Lake Ngami, 2700 ft., 6th July. (No. 54, *R. B. W.*)

Iris brown; bill and feet grey.

This Parrot was quite a common bird in the more heavily-wooded parts of Ngamiland N. and N.E. of the Lake, and along the Botletle River.

SCOPS ERLANGERI Ogilvie-Grant.

Scops erlangeri Ogilvie-Grant, Ibis, 1906, p. 660.

a. ♂. Molopo River, 3000 ft., 8th April. (No. 4, *R. B. W.*)

Iris bright orange; bill and feet horn-coloured.

This Owl is very common in the kameel-thorn forest along the Molopo River, and also in Ngamiland, but I never met with it far from water. It is partially diurnal, and feeds largely on big orthoptera and coleoptera, as well as small birds and mammals. I had a tame specimen, which was sent to the Zoological Gardens; it was one of the most amusing and delightful pets I have ever had.

SCOPS CAPENSIS (Smith).

Pisorhina capensis Stark & Selater, iii. p. 254; Reich. i. p. 666.

a. ♂. Lehutitu, 3000 ft., 15th May. (No. 36, *R. B. W.*)

Iris yellow; bill and feet dark grey.

This is a remarkably grey example, without any traces of rufous in the plumage, grey being the predominating colour of both the upper and under parts. In the British Museum

there is a second and very similar example from Damaraland, procured by C. J. Andersson ; both these birds no doubt represent extreme examples of the grey phase, while the bird from N. Uganda, described by Neumann as *Pisorhina capensis ugandæ*, is typical of the red phase.

This was the only specimen of the Cape Scops-Owl met with during the journey. It was found among dry acacia-forest in the Kalahari, and was quite invisible except when moving.

GLAUCIDIUM CAPENSE (Smith).

Glaucidium capense Stark & Selater, iii. p. 259 ; Reich. i. p. 672.

a. ♂. Mababe Flats, 3000 ft., 8th August. (No. 81, R. B. W.)

Iris yellow ; bill light horn-coloured ; feet light brown.

A few of these Owls were seen in Ngamiland, but they are very shy and difficult to obtain. I have never been able to identify the note of either this species or of *Scops capensis*.

STRIX FLAMMEA Linn.

Strix flammea maculata Reich. i. p. 676.

Strix flammea Stark & Selater, iii. p. 237.

a. ♂. Lake Ngami, 2700 ft., 11th July. (No. 59, R. B. W.)

Iris dark brown ; bill white ; feet brown.

I believe the Barn-Owl in South Africa breeds almost entirely in the nests of the " Hammer-Kop " (*Scopus umbretta*), and that these unhappy birds have to supply every pair of Barn-Owls in the district with a house before they can breed themselves.

ASTUR POLYZONOIDES (Smith).

Astur polyzonoides Stark & Selater, iii. p. 358 ; Reich. i. p. 556.

a. ♂. Molopo River, 3000 ft., 8th April. (No. 1, R. B. W.)

Iris scarlet ; bill black, base yellow ; feet yellow.

MELIERAX GABAR (Daud.).*Melierax gabar* Stark & Selater, iii. p. 364.*Micronisus gabar* Reich. i. p. 565.*a, b.* ♂ ♀. Lake Ngami, 2700 ft., 6th & 7th July. (Nos. 53, *R. B. W.*; 547, *G. L.*)*Male.* Iris brownish-red; bill black, cere red; feet red.*Female.* Iris crimson; bill black; feet scarlet.*ANAS SPARSA* (Smith).*Anas sparsa* Reich. i. p. 115; Stark & Selater, iv. p. 136.*a.* ♂. Vryburg, 18th Feb. (*R. B. W.*)

Iris dark brown; bill light blue-grey with a black spot, as in the Yellow-bill Duck; feet yellowish-orange. Length in the flesh 23·1 inches; weight 2¼ lbs.

A single bird was shot in a reedy spruit near Vryburg. Among the myriads of Duck in Ngamiland, not a single specimen of either the Black Duck or Cape Shoveler was seen.

NYROCA ERYTHROPHTHALMA (Wied).*Nyroca capensis* Reich. i. p. 108.*Nyroca erythrophthalma* Stark & Selater, iv. p. 147.*a, b.* ♂ ad. et imm. Lake Ngami, 2700 ft., 25th June and 12th July. (*G. L.*)*Ad.* Iris hazel; bill blue, nail black; feet slate-coloured.*Imm.* Iris chestnut; bill dark slaty; feet grey.

Total length of adult in the flesh 18·5 inches.

BALEARICA REGULORUM (Bennett).*Balearica regulorum* Reich. i. p. 265; Stark & Selater, iv. p. 284.*a, b.* ♂ (heads only). Mababe Flats, 3000 ft., 30th July. (*R. B. W.*)

Colour of the throat and behind the ear bright scarlet-orange.

This Crane is very common on these flats in parties consisting of from three to twenty birds. The specimens obtained were part of a flock of eleven.

CUSORUS TEMMINCKI Swains.

Cursorius temmincki Reich. i. p. 155 ; Stark & Selater, iv. p. 325.

a. Adult. Vryburg, 4000 ft., 10th April. (No. 98, R. B. W.)

Iris dark brown ; bill blackish, lower mandible lighter ; feet white.

A single specimen of Temminck's Courser was shot on the edge of a large dry dam. This is the only occasion upon which I met with this species in the bush-veldt of Bechuanaland.

ÆGIALITIS TRICOLLARIS (Vieill.).

Charadrius tricollaris Reich. i. p. 176.

Ægialitis tricollaris Stark & Selater, iv. p. 367.

a. ♂. Okwa, 3000 ft., 6th June. (No. 46, R. B. W.)

Iris and bill dark brown ; feet light brown.

VINAGO SCHALOWI (Reich.).

Vinago schalowi Reich. i. p. 399 ; Stark & Selater, iv. p. 159.

a. ♂. Tsau, 2700 ft., 28th June. (No. 522, G. L.)

Iris dark brown ; bill coral, tip red ; feet coral.

This Pigeon is common in Ngamiland where there are large trees. During the winter it feeds largely on the berries of the "mocoohan" tree. It has a very remarkable note, which is impossible to describe.

TURTUR DECIPIENS Finsch & Hartl.

Turtur decipiens Reich. i. p. 412.

Turtur ambiguus Reich. i. p. 416 ; Stark & Selater, iv. p. 168.

a. ♀. Mababe Flats, 3000 ft., 14th August. (No. 91, R. B. W.)

Iris pale cream-coloured ; bill black ; feet pink.

The wing-measurement of this bird is 170 mm.

CHALCOPELIA AFRA (Linn.).

Chalcopelia afra Reich. i. p. 426; Stark & Selater, iv. p. 180.

Chalcopelia chalcospilos volkmanni Reich. J. f. O. 1902, p. 134 (Damaraland).

a. ♀. Lake Ngami, 2700 ft., 6th July. (No. 51, R. B. W.)

Iris dark brown; bill black; feet dull purple.

This specimen has green metallic wing-spots, and belongs to the form *C. chalcospila* (Wagl.) as recognised by Sharpe and subsequently named *C. c. volkmanni* by Dr. Reichenow.

This little Dove was not met with until we reached Ngamiland, and there it was not at all common.

FRANCOLINUS SEPHÆNA (Smith).

Francolinus sephæna Reich. i. p. 495; Stark & Selater, iv. p. 199.

a. ♂. Tamalakan River, 3000 ft., 23rd August. (No. 92, R. B. W.)

Iris dark brown; bill black; feet scarlet.

A few examples of this Francolin were met with in Ngamiland along the wooded banks of the rivers, but they were not nearly in such numbers as *F. adspersus* and *F. swainsoni*. They roost in trees, and have a very loud call or crow, most often heard in the early morning and at sunset.

NUMIDA PAPILLOSA Reich.

Numida papillosa Reich. i. p. 444; Stark & Selater, iv. p. 231.

a, b. ♂ ♀ (heads only). Molopo River, 3000 ft., 20th April. (G. L.)

Iris dark brown; bill black, tip horn-coloured; feet very dark grey.

Soft parts on head dark lead-coloured, becoming lighter on the throat and turning to bluish round the lower neck.